

## ABSTRACT

The subjects of the present invention are to prepare a highly functionalized cell extract for cell-free protein synthesis and to specify and eliminate inhibitors and unstable substances present in conventional and various cell extracts for cell-free protein synthesis.

Also provided is a method for preparing the cell extract for use in a cell-free protein synthesis means, wherein ATP-mediated phosphorylation pathway of sugar present in the cell extract is controlled. In particular, the control is introducing at least one selected from the following:

- 1) removing monosaccharides,
- 2) removing phosphorylated sugars,
- 3) controlling production of monosaccharides from polysaccharides, and
- 4) controlling production of phosphorylated sugars from monosaccharides.